



CIRCONTROL



CDU-TCP

User Manual

CIRCONTROL SA



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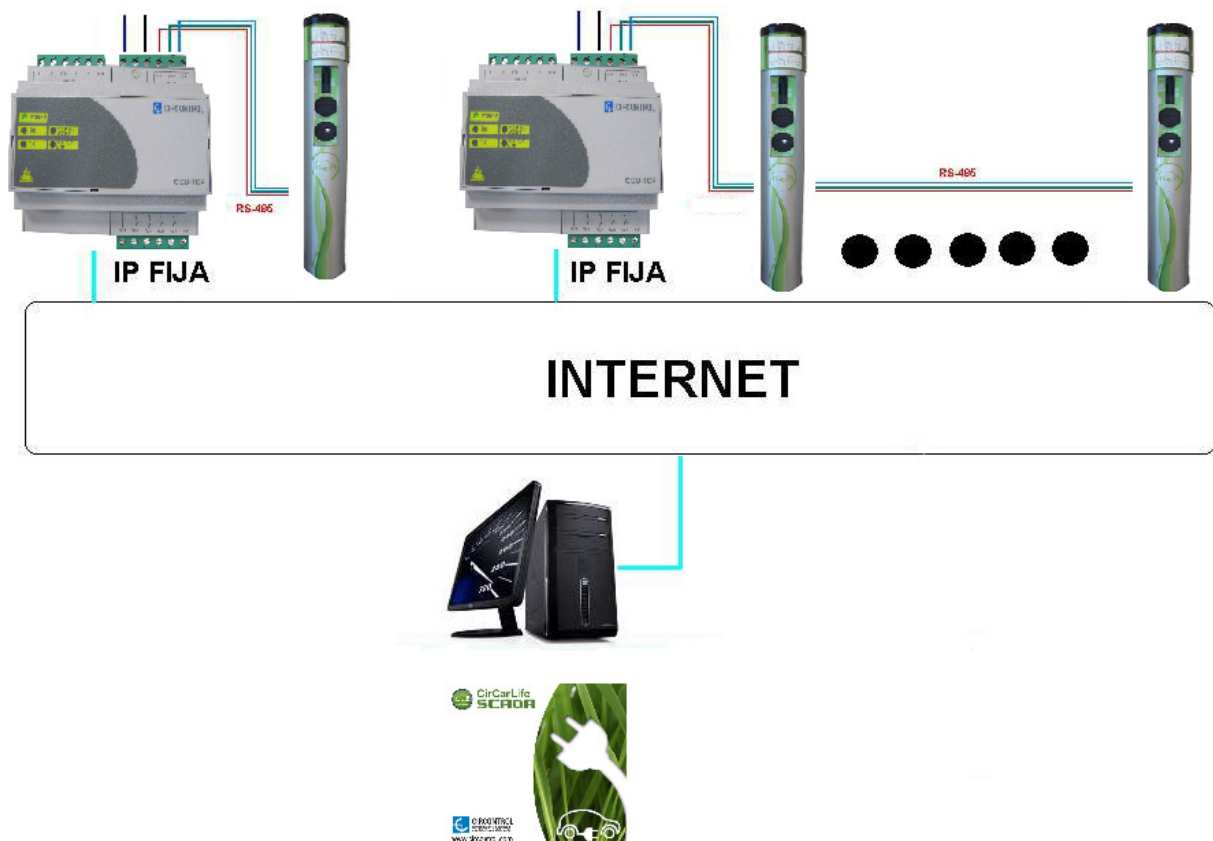


CDU-TCP CONFIGURATION WITH CirCarLife SCADA

1 .- WHAT IS CDU-TCP?

The CDU-TCP is a device with the latest CIRCONTROL technology, based on the CirCarLife Scada Software. Inside there is a microprocessor with 64Mb memory and driver routines for CIRCONTROL equipment. It can support up to 32 charging stations in its RS485 Bus, and through its Ethernet connection you can access to the internal RS485 bus and the internal memory, remotely through e.g. Internet. It records and stores several weeks of data from connected equipment, in case of loss of communication with the control system (higher SCADA). Once retrieved the communication, the CDU-TCP returns the data stored in its memory to the control system (SCADA), preventing loss of data while there was no communication. This team is capable of being programmed to manage events (alarms) taking into account any parameter of any CIRCONTROL unit connected to it.

The CDU-TCP does not store SCADA screens or reports. These must be on a PC with a superior SCADA, connected to one or more CDU-TCP who will be in charge of providing data to the SCADA.



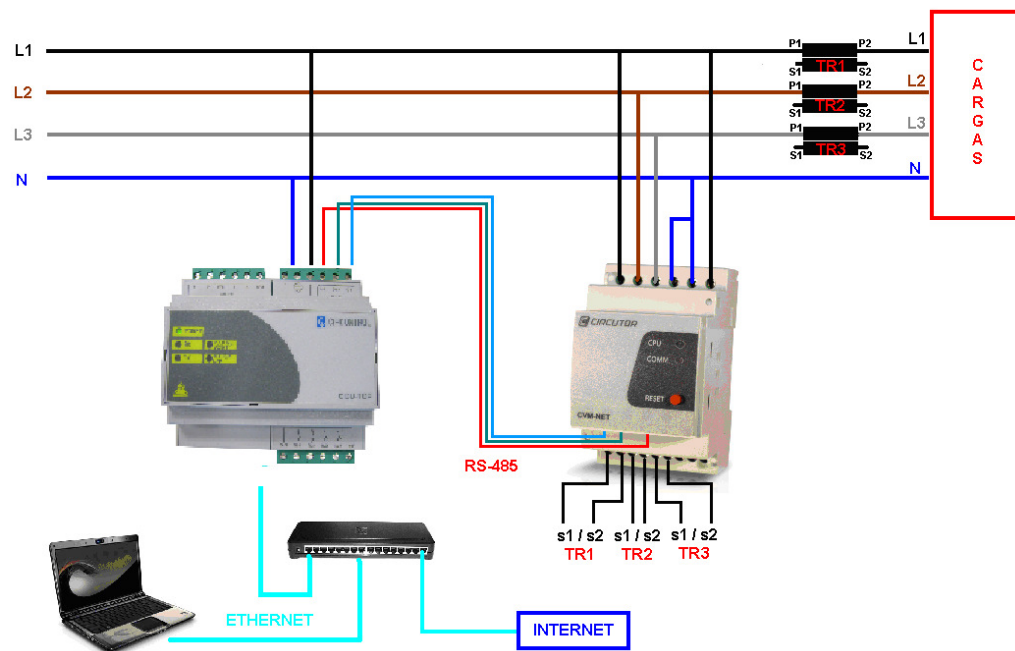


2.- REQUIREMENTS.

For the CDU-TCP programming, CirCarLife Scada EDITOR 3.0 or higher is required.

After starting the Software installation, choose the custom option and install only the EDITOR. Follow steps to complete the installation.

The next step is to electrically connect the computers using the following scheme.



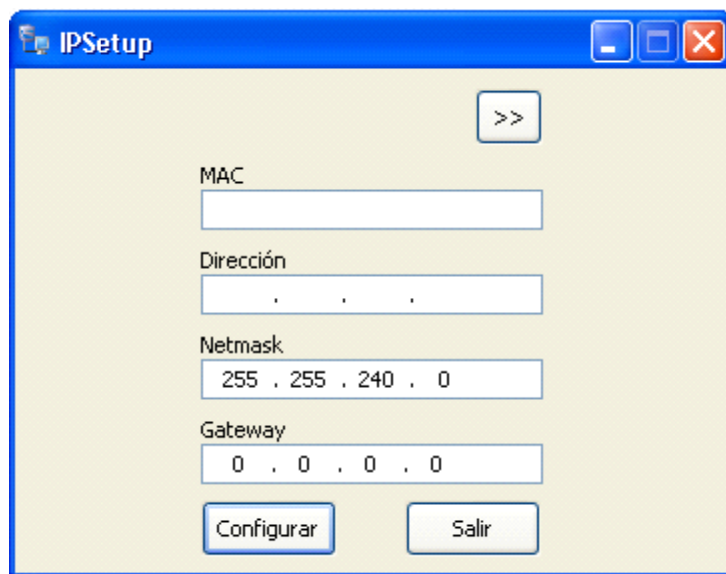


Now configure:

- The IP address of CDU-TCP to communicate with it.
- The equipment connected to RS485 bus through CirCarLife Scada.

3 .- SETUP THE IP ADDRESS IN THE CDU-TCP

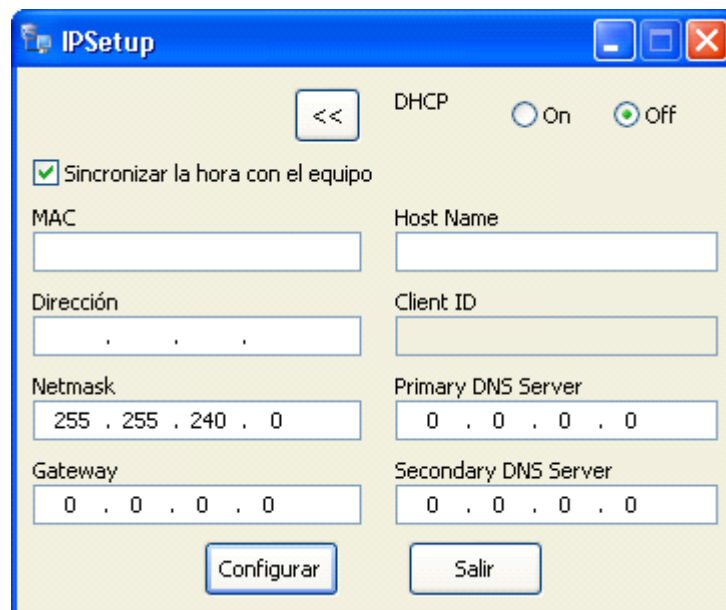
Run “IPSETUP” included in the MINI-CD that came with the unit.



The screenshot shows the 'IPSetup' window with the following fields and buttons:

- MAC: [Empty text box]
- Dirección: [Empty text box with dots for IP address]
- Netmask: [255 . 255 . 240 . 0]
- Gateway: [0 . 0 . 0 . 0]
- Buttons: 'Configurar' and 'Salir' at the bottom.
- Top right button: '>>' (Next)

Display more options in this program by clicking the button on the top right.



The screenshot shows the 'IPSetup' window with the following fields and buttons:

- Top right button: '<<' (Previous)
- DHCP: Radio buttons for 'On' and 'Off' (currently 'Off' is selected).
- ☒ Sincronizar la hora con el equipo
- MAC: [Empty text box]
- Host Name: [Empty text box]
- Dirección: [Empty text box with dots for IP address]
- Client ID: [Empty text box]
- Netmask: [255 . 255 . 240 . 0]
- Primary DNS Server: [0 . 0 . 0 . 0]
- Gateway: [0 . 0 . 0 . 0]
- Secondary DNS Server: [0 . 0 . 0 . 0]
- Buttons: 'Configurar' and 'Salir' at the bottom.



The next important step to consider is to set the internal clock in the unit. This machine has a battery that keeps the clock in time for a specific period, after this period, the time is "reset". As this is a machine that records data by date and time is very important to perform this step.

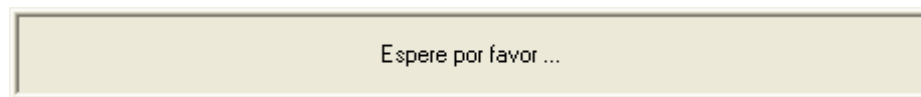
Mark the option to "Sincronizar la hora con el equipo"

Enter the unit's MAC address, this MAC address is reflected in the label at the side of the unit and identifies it in an Ethernet network. This MAC address is unique to each team. The format of the MAC addresses of CIRCONTROL are:

00:26:45:XX:YY:ZZ

Then type the IP address, NETMASK and GATEWAY. If the unit will be on a corporate network, you must have the authorisation of the administrator of the network so that you give in this data. The GATEWAY is only needed in case the unit is to be accessible from the Internet.

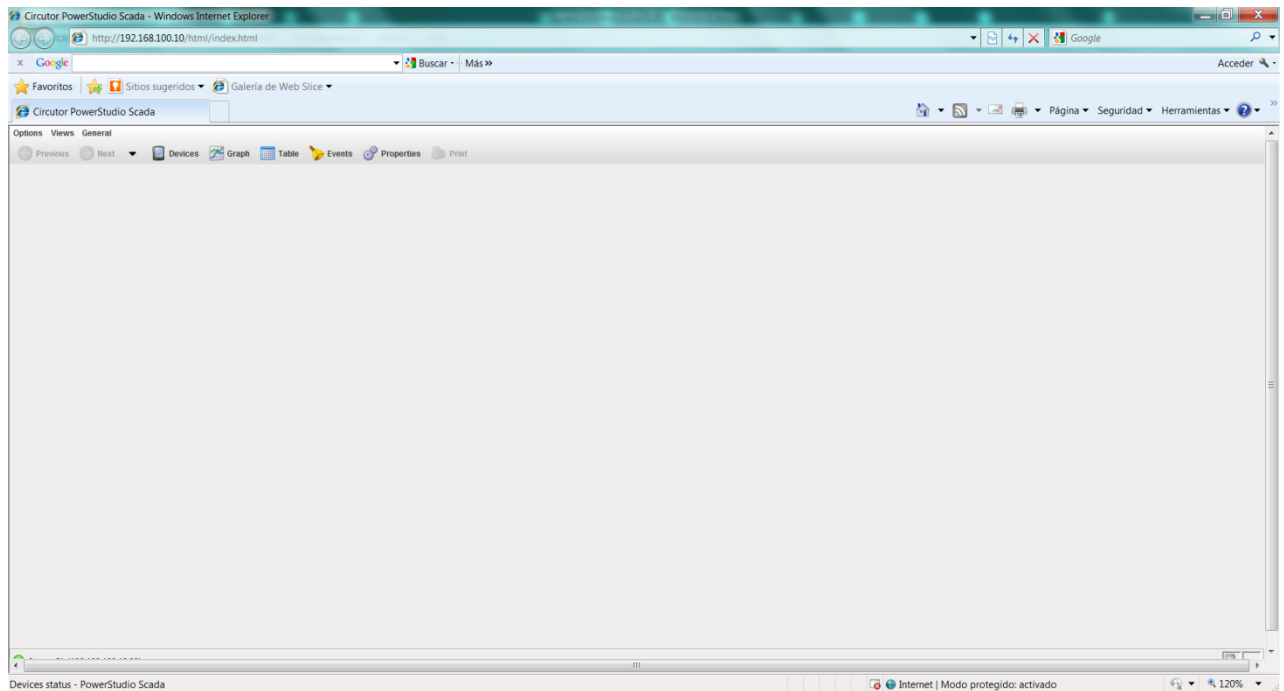
Once these data typed click "OK". The following message will be shown:



If the unit is detected, it will show the following window. Otherwise check the connections or Windows setup to check the firewall or antivirus which can be blocking possible communication ports.



Then accept this message and automatically will be displayed a browser window with the default PowerStudio Scada WEB page that is hosted within the CDU-TCP



At this point, the CDU-TCP is online and ready to accept any settings from the CirCarLife Scada EDITOR and a computer.

4.- CirCarLife SCADA APPLICATION FOR DEVICES SETUP.

You can configure any CIRCONTROL device connected to the RS485 in two ways:

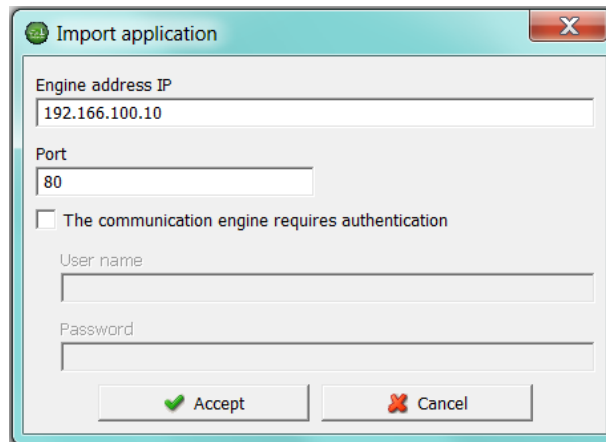
BY THE FIRST CDU-TCP IMPORT.

Open the CirCarLife Scada Editor and create a new application. Put a descriptive text in this application that helps you to remember this is the setup application.

Click on "Import".



Next window will appear, where you must enter the IP address you configured in the CDU-TCP and port 80 by default



The "Import application" dialog box contains the following fields and controls:

- Engine address IP:** A text field containing "192.166.100.10".
- Port:** A text field containing "80".
- Authentication:** A checkbox labeled "The communication engine requires authentication" which is currently unchecked.
- User name:** An empty text field.
- Password:** An empty text field.
- Buttons:** "Accept" (with a green checkmark icon) and "Cancel" (with a red X icon).

Click "Accept" and start the import process.

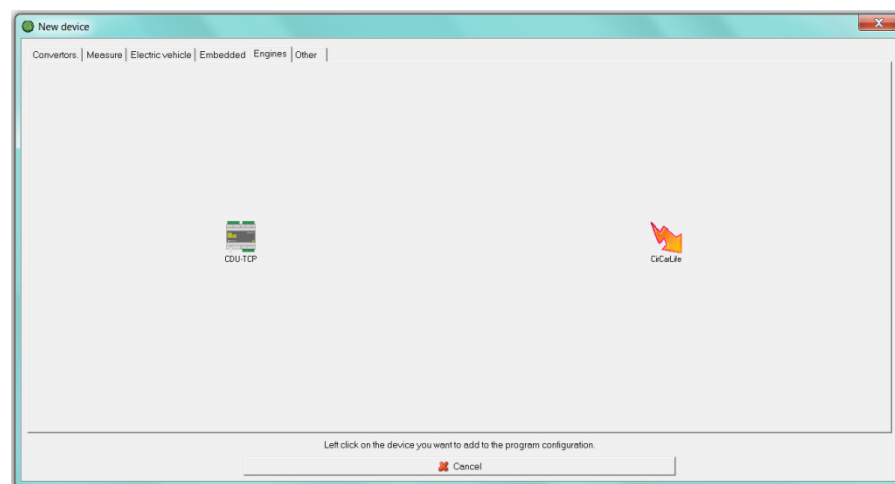
Once completed this process, you will notice that the icons of "screens" and "reports" disappear. Remember that CDU-TCP is a CirCarLife Scada data server and event manager. Follow steps in chapter 5 of this tutorial.

THROUGH A NEW CONFIGURATION FROM “EDITOR”

Open the CirCarLife Scada Editor and create a new application. Put a descriptive text in this application that helps you to remember this is the setup application.

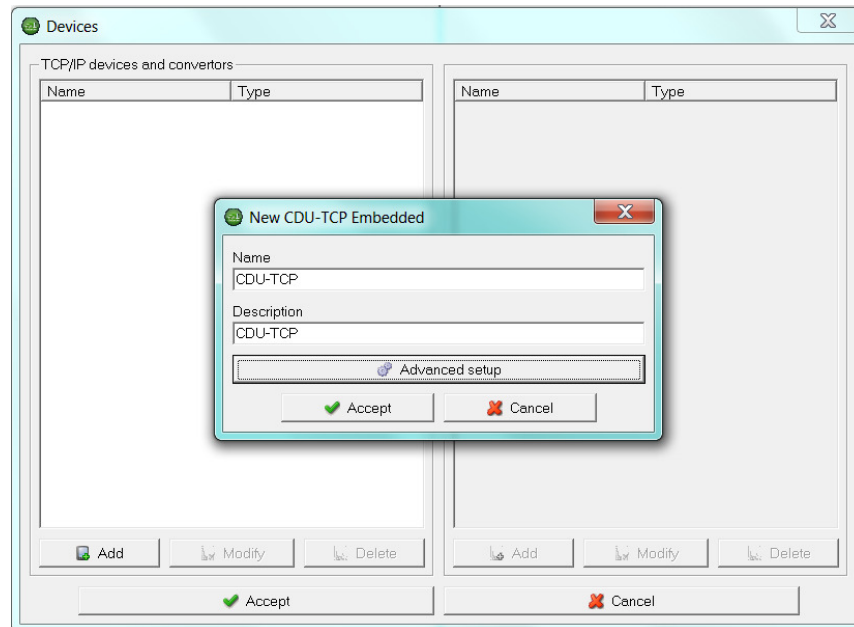
Add a new device: "Setup"/"Devices", and “Add” in “Embedded” area

Choose the driver **CDU-TCP**.



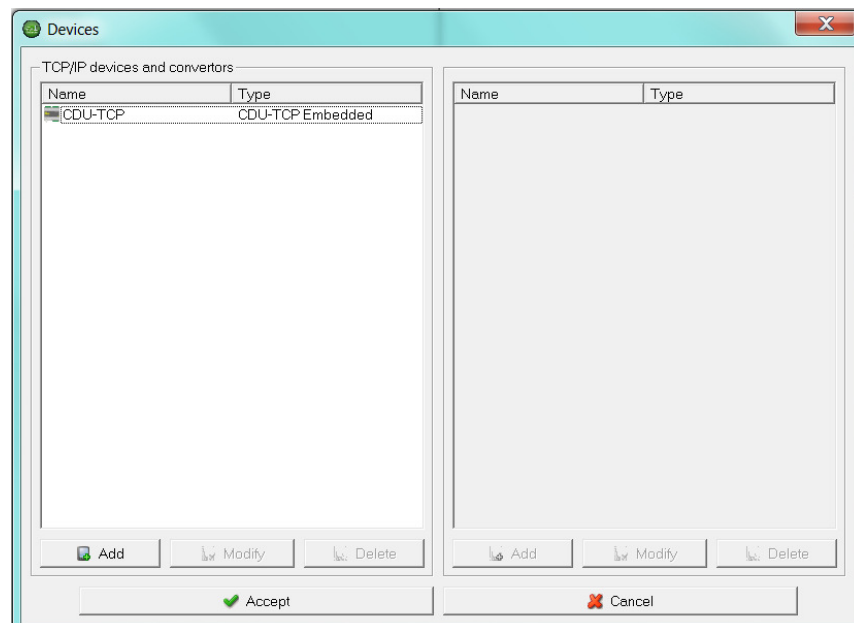


In the next screen type the name of the device which will be the CirCarLife Scada Engine.



Click "Accept"

If the unit is "online", it will be added to the list of devices.



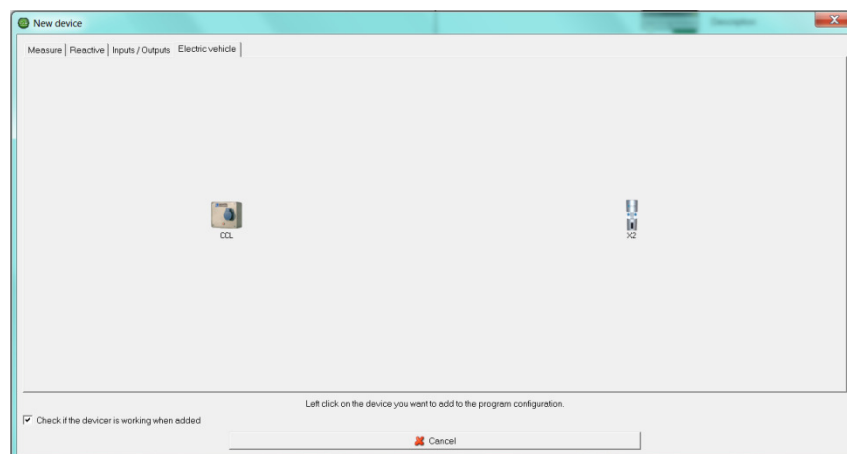


Proceed to the next section to configure the equipment connected to **CDU-TCP**.

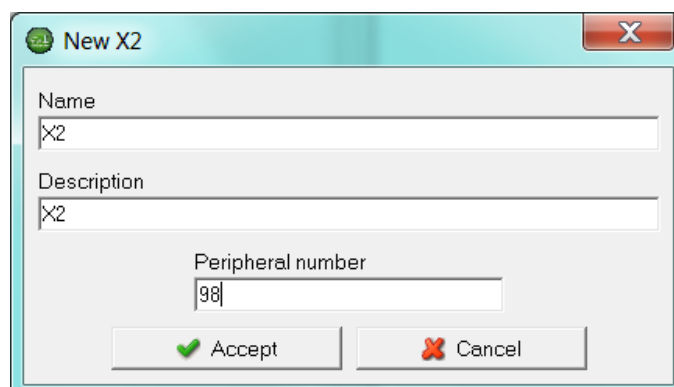
5 .- HOW TO SETUP DEVICES CONNECTED TO CDU-TCP

To set the units connected to the CDU-TCP RS485 bus, click on "Add" from the list of devices connected to CDU-TCP (right list)

In the next window select the wished devices. In this tutorial we used a X2 in the "Electric Vehicle" area. Select the device and click "OK" (X2 is standard CCL-PE2, CCL-PE2-XX, CCL-CP1, CCL-CP1-XX, CCL-CP2, CCL-CP2-XX driver)



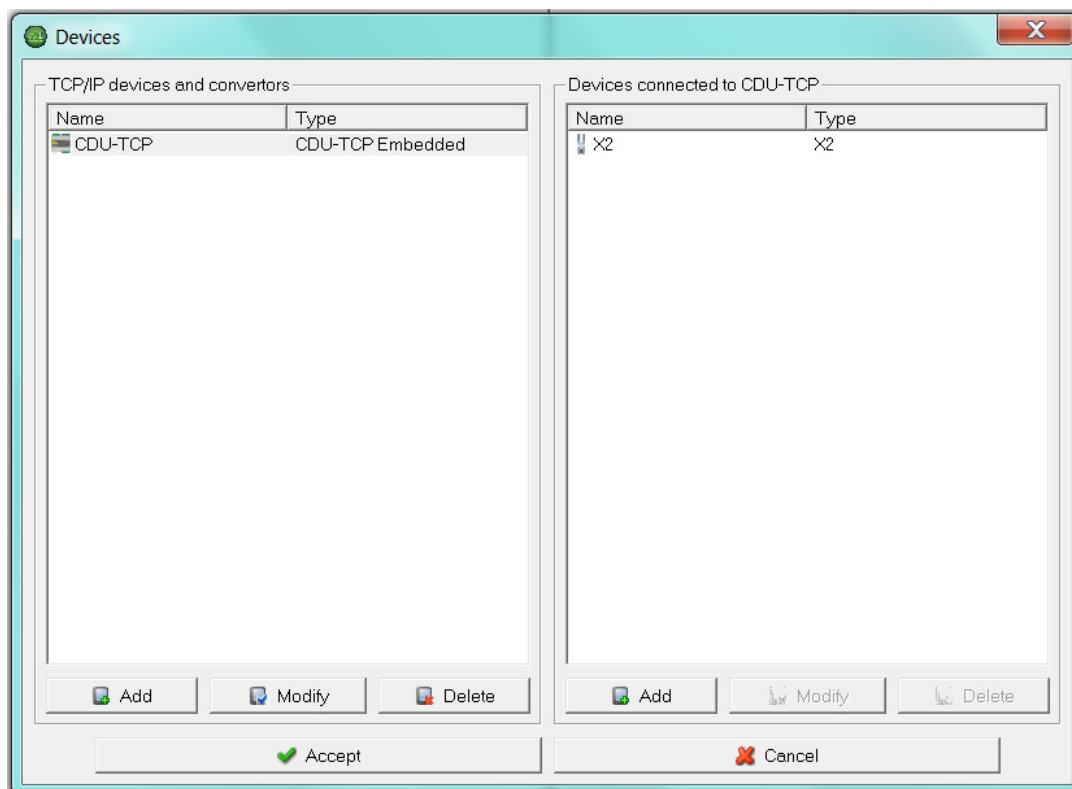
Define a name and description for the device, and the number of device on the communication bus. The X2 has a default peripheral No. 98.



Click on "Accept".

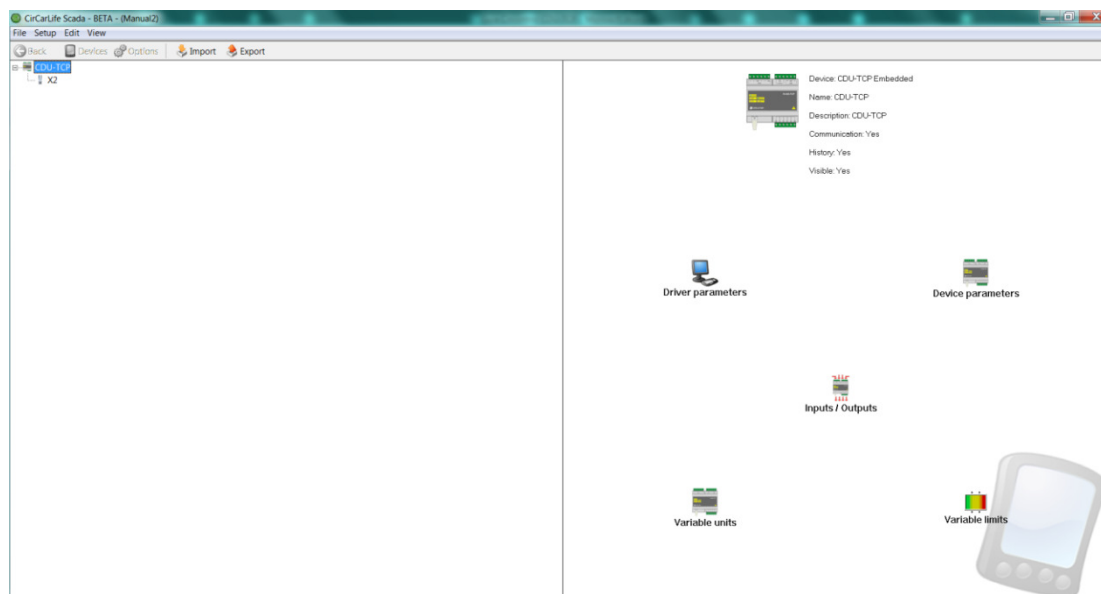


If the equipment is recognized and communicating, it will be added to the list of devices.



Click "Accept".

At this point, you have configured the hardware of the CDU-TCP application on your PC. Before exporting this information to the unit, you may set some parameters by clicking each icon on the next screen.





For example, to select the data capture frequency, you should select this. Both the CDU-TCP and X2 may have different registration periods.

Click on "Driver Parameters" on each unit and change the data capture period if necessary.

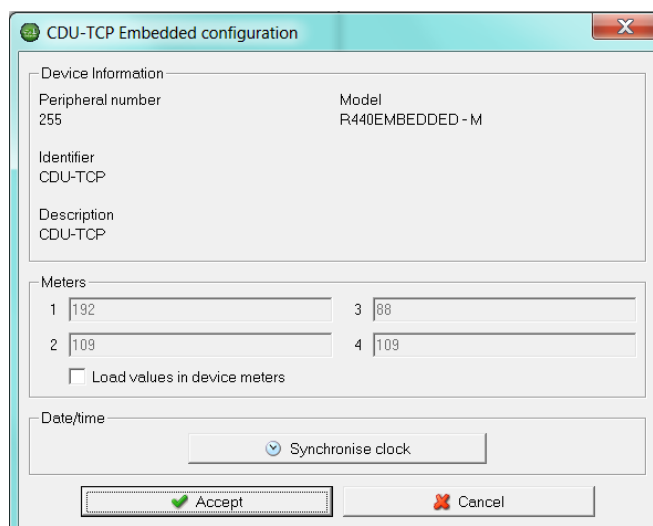
Note that CDU-TCP unit has an internal memory of 64MB cyclical, enough to save the historical records of an X2 for several weeks with a registration period of 10 or 15 min. If the recording time decreases or increases the number of devices, historical data can be reduced proportionately. Note that the system is taking readings during that period of capture and at the end of this, makes the average of all data and records in its memory. The maximum and minimum data are for the end of that time data capture.

6 .- ADJUST THE CLOCK IN THE CDU-TCP FROM CirCarLife SCADA

The setting of the internal clock in the CDU-TCP, can be done with the "IPSETUP" software mentioned at the beginning of this manual.

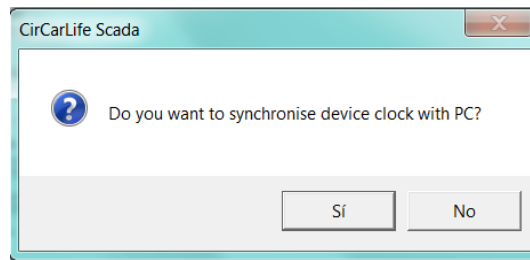
The next important step to consider is to set the internal CDU-TCP clock. This unit has a battery that keeps the clock by a time period, in case of power failure the unit, with the battery in perfect condition, up 2 days. After two days the factory default time data will be restored. As this is unit that records data by date and time (timestamp), is very important to perform this step. Proceed as follows.

Click on the icon "Device Parameters".

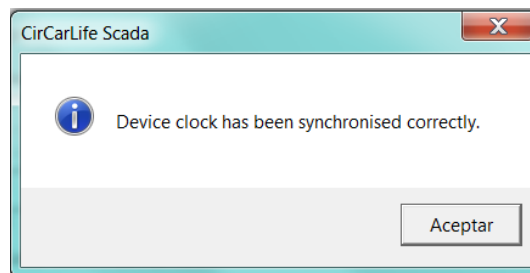


Click on the "Synchronise clock".

In the next window click "Yes"



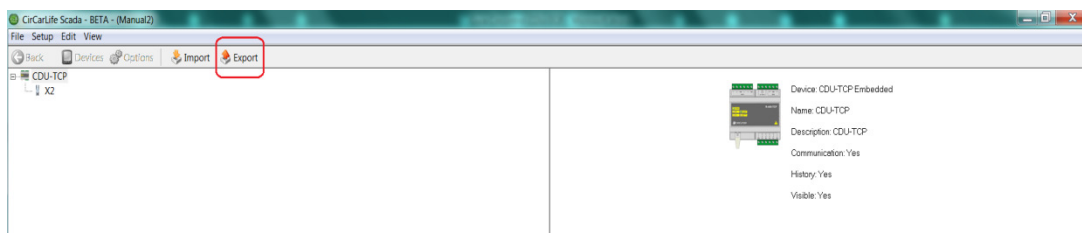
If the unit is "online" the following window:



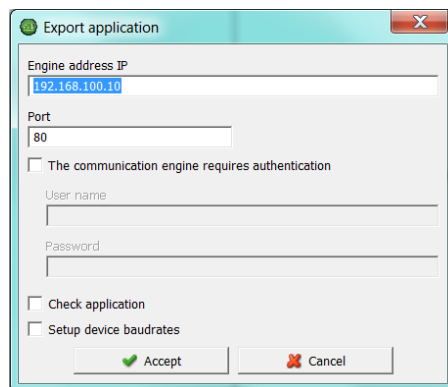
7 .- HOW TO “EXPORT” APLICATIONS TO THE CDU-TCP

Accept changes and return to the main screen CirCarLife Scada Editor. For the unit to accept the changes you need to export the application.

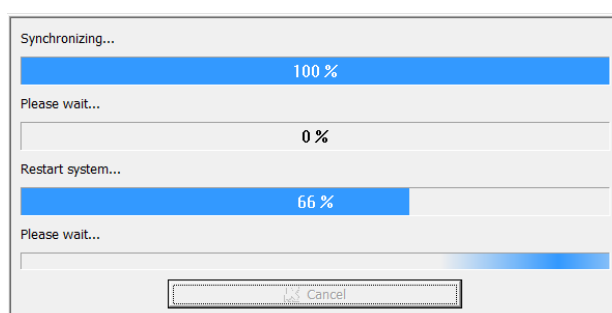
Click on the export icon.



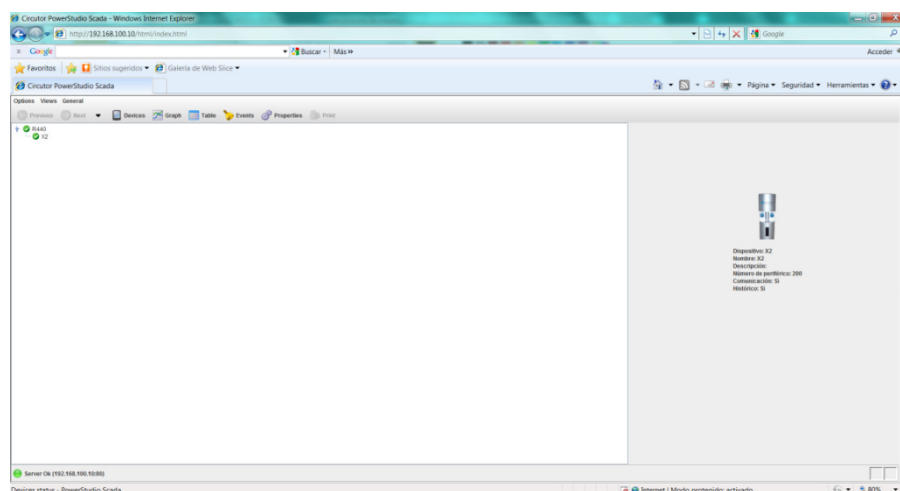
In the configuration window you must enter the IP address programmed into the unit at the beginning of this tutorial, the default port is 80.



Click "Accept" and the export process will start.



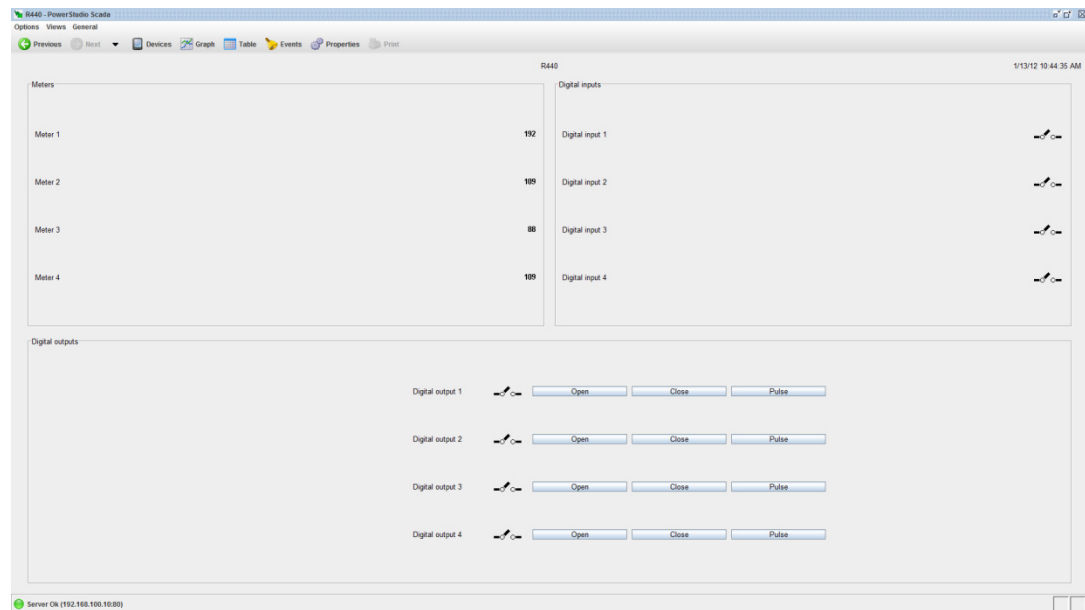
Now CDU-TCP unit is configured with an X2 computer. You can run the CirCarLife Scada Client or web browser in the Internet and through the unit's IP address, you can display data from the CDU-TCP, X2 or any Circontrol device connected to the RS-485 bus.



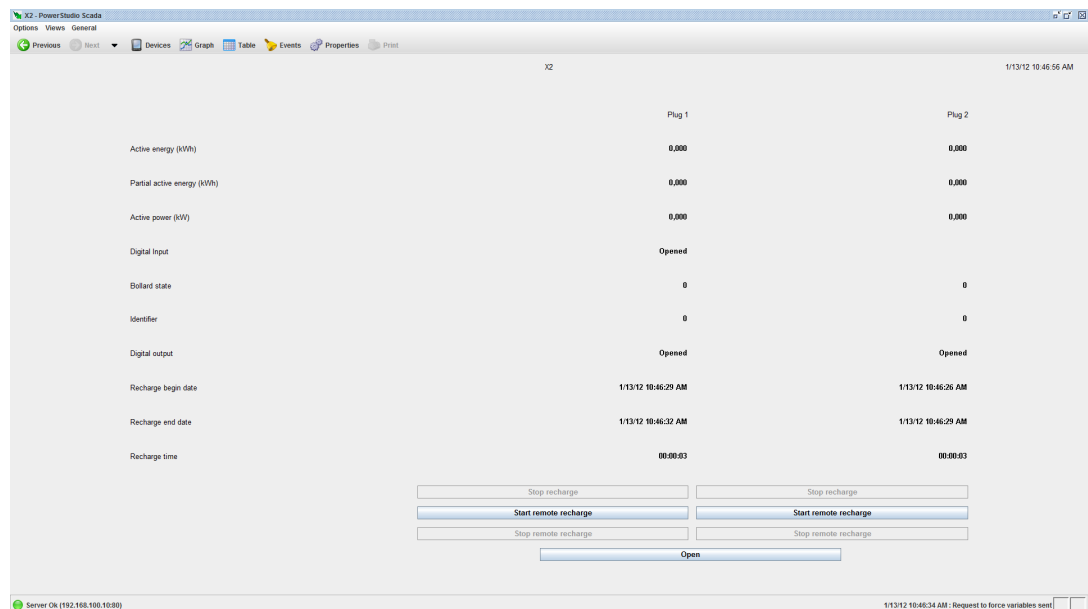
Through the icons "Graph" and "Table" you can access historical data X2 which has in its memory the CDU-TCP. Obviously at this moment you will not see any data until it happen several registration periods for each set of equipment.



CDU-TCP Status Screen:



X2 Status Screen:





C / Innovació, 3
Pol. Ind. Can Mitjans
08232 - Viladecavalls
Barcelona - Spain
Tel: +34 937 362 940
Fax: +34 937 362 941
www.circontrol.com

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